Supporting Information

Fabrication and evaluation of molecularly imprinted magnetic nanoparticles for selective recognition and magnetic separation of lysozyme in human urine

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1. Equations

The pseudo-first-order equation is generally expressed as:

$$\ln(Q_e - Q_t) = \ln Q_e - k_1 t$$  \hspace{1cm} (1)

The pseudo-second-order equation is generally expressed as:

$$\frac{t}{Q_t} = \frac{1}{k_2 Q_e^2} + \frac{t}{Q_e}$$  \hspace{1cm} (2)

where $t$ (min) is adsorption time; $Q_t$ (mg/g) and $Q_e$ (mg/g) are the amounts of the adsorbed Lyz at time $t$ (min) and at equilibrium, respectively; $k_1$ is the rate constant of the pseudo-first-order adsorption model, $k_2$ (g/(mg min)) represents the pseudo-second-order adsorption rate constant.

2. Supporting data

![Diameter distribution of Fe$_3$O$_4$, Fe$_3$O$_4$@SiO$_2$ and Lyz-MMIPs by DLS technique](image)

**Fig.S1** Diameter distribution of Fe$_3$O$_4$, Fe$_3$O$_4$@SiO$_2$ and Lyz-MMIPs by DLS technique
Fig.S2 XPS high-resolution scan of Si2p of Lyz-MMIPs

Fig.S3 The effects of (A) NaCl concentrations (desorption period: 12 h, solution volume: 20 mL, pH: 7.0) and (B) desorption period (NaCl concentration: 1.0 mol/L, solution volume: 20 mL, pH: 7.0) on the desorption of Lyz from Lyz-MMIPs
Fig.S4 UV-vis spectrograms of human urine samples

Table S1 Comparison with reported method for the adsorption capacity of Lyz

<table>
<thead>
<tr>
<th>Adsorbents</th>
<th>Preparation method</th>
<th>Adsorption capacity (mg/g)</th>
<th>Ref.</th>
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<tbody>
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<td>Fe₃O₄@Lyz-MIP</td>
<td>surface imprinting</td>
<td>11.87</td>
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<td>MIP</td>
<td>precipitation polymerization</td>
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<td>Lyz-MMIPs</td>
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References